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|----------------|-----------|----------------|----------------|--------------|-----------|-----------|----|
| NTDB id 1159   | ABDM36    | RS04765        | WP 001166105.1 | MSRGGATPYRFL | IRHIVARCG | LLFATLKGK | 31 |
| NTDB id 1150   | A1552VC   | RS08580        | WP 001166105.1 | MSRGGATPYRFL | IRHIVARCG | LLFATLKGK | 31 |
| NTDB id 1395   | DSB67     | RS04445        | WP 010649155.1 | MSRGGATPYRFL | IRHIVARCG | LLFATLKGK | 31 |
| NTDB id 1294   | VP        | RS04495        | WP 021449594.1 | MSRGGATPYRFL | IRHIVARCG | LLFATLKGK | 31 |
| NTDB id 1362   | HI 1008   | AAC22669.1     |                |              |           |           |    |
| NTDB id 1382   | A4U84     | RS07375        | WP 062924234.1 |              |           |           |    |
| NTDB id 595    | KW2       | RS08725        | WP 021037687.1 |              |           |           |    |
| NTDB id 521    | SMSK321   | RS04960        | WP 000443804.1 |              |           |           |    |
| NTDB id 493    | SM12261   | RS04300        | WP 000387351.1 |              |           |           |    |
| NTDB id 153    | SP        | RS04730        | WP 000387344.1 |              |           |           |    |
| NTDB id 263    | KZH43     | RS04195        | WP 000387330.1 |              |           |           |    |
| NTDB id 222    | SPD       | RS04535        | WP 000387330.1 |              |           |           |    |
| NTDB id 188    | SPR       | RS04295        | WP 000387330.1 |              |           |           |    |
| NTDB id 36     | MW        | RS08230        | WP 001793467.1 |              |           |           |    |
| NTDB id 20     | SA        | RS08005        | WP 001802022.1 |              |           |           |    |
| NTDB id 105    | BSU 25590 | NP 390437.1    |                |              |           |           |    |
| NTDB id 1069   | ABD1      | RS03060        | WP 043960841.1 |              |           |           |    |
| NTDB id 1014   | ACIAD     | RS13855        | WP 004924483.1 |              |           |           |    |
| NTDB id 236528 | A6J94     | RS07570        | WP 002866798.1 |              |           |           |    |
| NTDB id 1242   | Cj0011c   | YP 002343483.1 |                |              |           |           |    |
| NTDB id 1127   | NGFG      | RS10560        | WP 003703428.1 |              |           |           |    |
| NTDB id 1126   | NGFG      | RS09375        | WP 003703428.1 |              |           |           |    |
| NTDB id 1125   | NGFG      | RS07215        | WP 003703428.1 |              |           |           |    |
| NTDB id 1108   | NGFG      | RS06525        | WP 003703428.1 |              |           |           |    |
| consensus      |           |                |                |              |           |           |    |

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|----------------|-----------|----------------|----------------|------------------------------|----------------------------|-------------------------------------|-----|
| NTDB id 1159   | ABDM36    | RS04765        | WP 001166105.1 | TAP                          | AA                         | Q                                   | 33  |
| NTDB id 1150   | A1552VC   | RS08580        | WP 001166105.1 | TAP                          | AA                         | Q                                   | 33  |
| NTDB id 1395   | DSB67     | RS04445        | WP 010649155.1 | TKT                          | KA                         | D                                   | 25  |
| NTDB id 1294   | VP        | RS04495        | WP 021449594.1 | DT                           | KA                         | D                                   | 24  |
| NTDB id 1362   | HI 1008   | AAC22669.1     |                | KAT                          | XQ                         | TAQSVVT                             | 35  |
| NTDB id 1382   | A4U84     | RS07375        | WP 062924234.1 | KVT                          | TS                         | TEHTPVV                             | 36  |
| NTDB id 595    | KW2       | RS08725        | WP 021037687.1 | VSKFNSSSSEKNKNEIMVDLKGAVAKPN | VYQISSDERLVDLIRQAGGFTDQ    | ADQKSINLSAKLKDEEVIYVPKVGESSSS       | 134 |
| NTDB id 521    | SMSK321   | RS04960        | WP 000443804.1 | DVKKEEKEEPVEQDLITVDVKGAV     | KSPGIYDLSVGSRVNDVQKAGGLTEQ | ADSKSLNLAQKVSDEALVYVPTKGEEAS        | 138 |
| NTDB id 493    | SM12261   | RS04300        | WP 000387351.1 | EVKKEEKEEPLEQDLITVDVKGAV     | KSPGIYDLPVGSRVNDVQKAGGLTEQ | ADSKSLNLAQKVSDEALVYVPTKGEEAAS       | 138 |
| NTDB id 153    | SP        | RS04730        | WP 000387344.1 | EVKKEEKEEPLEQDLITVDVKGAV     | KSPGIYDLPVGSRVNDVQKAGGLTEQ | ADSKSLNLAQKVSDEALVYVPTKGEEAVS       | 138 |
| NTDB id 263    | KZH43     | RS04195        | WP 000387330.1 | EVNKEEKEEPLEQDLITVDVKGAV     | KSPGIYDLPVGSRVNDVQKAGGLTEQ | ADSKSLNLAQKVSDEALVYVPTKGEEAVS       | 138 |
| NTDB id 222    | SPD       | RS04535        | WP 000387330.1 | EVNKEEKEEPLEQDLITVDVKGAV     | KSPGIYDLPVGSRVNDVQKAGGLTEQ | ADSKSLNLAQKVSDEALVYVPTKGEEAVS       | 138 |
| NTDB id 188    | SPR       | RS04295        | WP 000387330.1 | EVNKEEKEEPLEQDLITVDVKGAV     | KSPGIYDLPVGSRVNDVQKAGGLTEQ | ADSKSLNLAQKVSDEALVYVPTKGEEAVS       | 138 |
| NTDB id 36     | MW        | RS08230        | WP 001793467.1 | DVQVKDGDNSKNKGPVYVDVKGAV     | KHPNVYKMTSKDRVVDLLDKA      | QLLEDADVQSINLSEKLTQDKMIFIPHKGGQKNVE | 148 |
| NTDB id 20     | SA        | RS08005        | WP 001802022.1 | DVQVKDGDNSKNKGPVYVDVKGAV     | KHPNVYKMTSKDRVVDLLDKA      | QLLEDADVSRINLSEKLTQDKMIFIPHKGGQKNVE | 148 |
| NTDB id 105    | BSU 25590 | NP 390437.1    |                | TVVKQEANNDESNETIVIDIKGAVQHPG | VYEMRTGDRVSAIEKAGGTSEQ     | ADEAQVNLAELIQDGTVVYIPKKGGEETAV      | 126 |
| NTDB id 1069   | ABD1      | RS03060        | WP 043960841.1 |                              | G.VISPSVCAQSFQDNFQ.E       | WKVKQQMYDQKLNISK                    | 58  |
| NTDB id 1014   | ACIAD     | RS13855        | WP 004924483.1 |                              | TLFSMQIVFAQGFQDQYD.A       | WKTQKKAHDTRLNSSA                    | 54  |
| NTDB id 236528 | A6J94     | RS07570        | WP 002866798.1 |                              | MKLLFLF                    | F                                   | 9   |
| NTDB id 1242   | Cj0011c   | YP 002343483.1 |                |                              | MKLLFLF                    | F                                   | 9   |
| NTDB id 1127   | NGFG      | RS10560        | WP 003703428.1 |                              | TMKKMFVLF                  | CML                                 | 43  |
| NTDB id 1126   | NGFG      | RS09375        | WP 003703428.1 |                              | TMKKMFVLF                  | CML                                 | 43  |
| NTDB id 1125   | NGFG      | RS07215        | WP 003703428.1 |                              | TMKKMFVLF                  | CML                                 | 43  |
| NTDB id 1108   | NGFG      | RS06525        | WP 003703428.1 |                              | TMKKMFVLF                  | CML                                 | 43  |
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| NTDB id 1159   | ABDM36    | RS04765        | WP 001166105.1 | .....VEEGIVITVNINTASAEELATLLKGI                       | 99  |
| NTDB id 1150   | A1552VC   | RS08580        | WP 001166105.1 | .....VEEGIVITVNINTASAEELATLLKGI                       | 99  |
| NTDB id 1395   | DSB67     | RS04445        | WP 010649155.1 | .....KYEGIEITVNINSATAQETATLLIGI                       | 91  |
| NTDB id 1294   | VP        | RS04495        | WP 021449594.1 | .....KYEGIEITVNINTASAEETATMLKGI                       | 90  |
| NTDB id 1362   | HI 1008   | AAC22669.1     |                | TQAEAQV.....APAVVSDKLNINTATASEI                       | 108 |
| NTDB id 1382   | A4U84     | RS07375        | WP 062924234.1 | MQQ.VAA.....TQKVNANVNVINTATASEI                       | 108 |
| NTDB id 595    | KW2       | RS08725        | WP 021037687.1 | ESTDSPTGSSVSNQISTTSGPKVNINKADLT                       | 213 |
| NTDB id 521    | SMSK321   | RS04960        | WP 000443804.1 | QHTGSGAP.....SSTSCKDKKINLNKASLE                       | 211 |
| NTDB id 493    | SM12261   | RS04300        | WP 000387351.1 | QQAGPGTA.....SSTSKEKKVNLNKASLE                        | 211 |
| NTDB id 153    | SP        | RS04730        | WP 000387344.1 | QQTGSGTA.....SSTSKEKKVNLNKASLE                        | 211 |
| NTDB id 263    | KZH43     | RS04195        | WP 000387330.1 | QQTGLGTA.....SSISKEKKVNLNKASLE                        | 211 |
| NTDB id 222    | SPD       | RS04535        | WP 000387330.1 | QQTGLGTA.....SSISKEKKVNLNKASLE                        | 211 |
| NTDB id 188    | SPR       | RS04295        | WP 000387330.1 | QQTGLGTA.....SSISKEKKVNLNKASLE                        | 211 |
| NTDB id 36     | MW        | RS08230        | WP 001793467.1 | PQIGVNS...VHVKNNGTNTNTKVNLTASV                        | 224 |
| NTDB id 20     | SA        | RS08005        | WP 001802022.1 | PQIEVNS...VHVKNNGTNTNTKVNLTASV                        | 224 |
| NTDB id 105    | BSU 25590 | NP 390437.1    |                | QQGGGGS...VQ..SDGGKGALVNINTATLE                       | 200 |
| NTDB id 1069   | ABD1      | RS03060        | WP 043960841.1 | NSSKISQ...TK..NFNDSTGQIHLNQANV                        | 132 |
| NTDB id 1014   | ACIAD     | RS13855        | WP 004924483.1 | LSKPTQQ.....SGTGKVNINSATAKELQ                         | 124 |
| NTDB id 236528 | A6J94     | RS07570        | WP 002866798.1 | ....ALT.....AFLFGAVNINTATLKE                          | 74  |
| NTDB id 1242   | Cj0011c   | YP 002343483.1 |                | ....ALT.....AFLFGAVNINTATLKE                          | 74  |
| NTDB id 1127   | NGFG      | RS10560        | WP 003703428.1 | ....FSC.....AFSLAAVNINAASQQUE                         | 109 |
| NTDB id 1126   | NGFG      | RS09375        | WP 003703428.1 | ....FSC.....AFSLAAVNINAASQQUE                         | 109 |
| NTDB id 1125   | NGFG      | RS07215        | WP 003703428.1 | ....FSC.....AFSLAAVNINAASQQUE                         | 109 |
| NTDB id 1108   | NGFG      | RS06525        | WP 003703428.1 | ....FSC.....AFSLAAVNINAASQQUE                         | 109 |
| consensus      |           |                |                | ***! !*! !* * !*! ***!***!***! ** !***** *!*!*! ***** |     |

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| NTDB id 1159   | ABDM36    | RS04765        | WP 001166105.1 | RILL.....                | 103 |
| NTDB id 1150   | A1552VC   | RS08580        | WP 001166105.1 | RILL.....                | 103 |
| NTDB id 1395   | DSB67     | RS04445        | WP 010649155.1 | RILL.....                | 95  |
| NTDB id 1294   | VP        | RS04495        | WP 021449594.1 | RILL.....                | 94  |
| NTDB id 1362   | HI 1008   | AAC22669.1     |                | RIIF.....                | 112 |
| NTDB id 1382   | A4U84     | RS07375        | WP 062924234.1 | CIVIE.....               | 113 |
| NTDB id 595    | KW2       | RS08725        | WP 021037687.1 | EISID.....               | 218 |
| NTDB id 521    | SMSK321   | RS04960        | WP 000443804.1 | YVTVD.....               | 216 |
| NTDB id 493    | SM12261   | RS04300        | WP 000387351.1 | YVTVD.....               | 216 |
| NTDB id 153    | SP        | RS04730        | WP 000387344.1 | YVTVD.....               | 216 |
| NTDB id 263    | KZH43     | RS04195        | WP 000387330.1 | YVTVD.....               | 216 |
| NTDB id 222    | SPD       | RS04535        | WP 000387330.1 | YVTVD.....               | 216 |
| NTDB id 188    | SPR       | RS04295        | WP 000387330.1 | YVTVD.....               | 216 |
| NTDB id 36     | MW        | RS08230        | WP 001793467.1 | YFTI.....                | 228 |
| NTDB id 20     | SA        | RS08005        | WP 001802022.1 | YFTI.....                | 228 |
| NTDB id 105    | BSU 25590 | NP 390437.1    |                | SITVK.....               | 205 |
| NTDB id 1069   | ABD1      | RS03060        | WP 043960841.1 | RLAL.....                | 136 |
| NTDB id 1014   | ACIAD     | RS13855        | WP 004924483.1 | RLAI.....                | 128 |
| NTDB id 236528 | A6J94     | RS07570        | WP 002866798.1 | DITVE.....               | 79  |
| NTDB id 1242   | Cj0011c   | YP 002343483.1 |                | DITIE.....               | 79  |
| NTDB id 1127   | NGFG      | RS10560        | WP 003703428.1 | QASVGAPAPKGPAPKPVLPVAVKK | 131 |
| NTDB id 1126   | NGFG      | RS09375        | WP 003703428.1 | QASVGAPAPKGPAPKPVLPVAVKK | 131 |
| NTDB id 1125   | NGFG      | RS07215        | WP 003703428.1 | QASVGAPAPKGPAPKPVLPVAVKK | 131 |
| NTDB id 1108   | NGFG      | RS06525        | WP 003703428.1 | QASVGAPAPKGPAPKPVLPVAVKK | 131 |
| consensus      |           |                |                | ***                      |     |

 non conserved  
 similar  
  $\geq 50\%$  conserved